Regional Sediment Evaluation Team (RSET) Workshop
September 11 through 13, 2002
Hood River, Oregon

Prepared for
U.S. Army Corps of Engineers, Portland District and Environmental Protection Agency, Region 10

October 31, 2002
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REGIONAL SEDIMENT EVALUATION TEAM (RSET) WORKSHOP
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INTRODUCTION

On April 26, 2002, Mr. John Iani, Regional Administrator, of the U.S. Environmental Protection Agency (EPA), and Brigadier General David Fastabend, Northwestern Division Engineer, of the U.S. Corps of Engineers (Corps), signed a letter to the Regional Directors of federal agencies initiating the formation of the Northwest Regional Dredging Team (RDT) (enclosure 1). The purpose of the RDT is to facilitate resolution of local and regional dredging/sediment issues and is the regional extension of the national interagency dredging issues team (NDT) that has existed since 1995.

The original intention of the NDT and RDT was to facilitate coordination and resolution of dredging issues at the federal agency level. However, the Corps and EPA agree that direct state and tribal participation in the dredging/sediment dialogue is a critical element to the success or failure of the RDT process. The RDT further understands that appropriate assessment of sediments and dredged material is a critical component to all dredging or dredged material or sediment disposal management activities regardless of whether the project is for maintenance of a navigation channel in Idaho or remediation of a contaminated sediment site in Oregon. Therefore, it is the RDT's intention that a revised Dredged Material Evaluation Framework (DMEF) manual, which consolidates the existing regional guidance manuals (e.g., PSSDA, Grays Harbor and Willapa Bay, Washington, Lower Columbia River, McNary and Lower Snake River Reservoirs, etc.), will be technically applicable throughout the Pacific Northwest for both freshwater and marine sediments and include upland disposal as well as in-water disposal.

Purpose of the Meeting

The Regional Sediment Evaluation Team (RSET) is an interagency team, co-chaired by the EPA, Region 10 and the Northwestern Division of the Corps, consisting of federal and state agencies with regulatory responsibilities for managing sediments. The RSET effort is a specific task being performed for the RDT. RSET conducted a three-day technical scoping workshop (Workshop) on September 11 through 13, 2002, for RSET members and other interested parties from federal and state agencies and regional Port authorities. The purpose of the meeting was to develop the scope for preparing an overall plan and process for updating the existing Columbia River DMEF, which was developed in 1998

by an interagency group that was the precursor to RSET. The workshop also was used to gauge the level of agency support for revising the existing DMEF and expanding it to include evaluation of sediments throughout the entire Washington, Oregon, and Idaho regions. Finally, the workshop asked attendees to identify technical and policy issues that would need to be addressed during the revision process.

The Workshop was designed to discuss the technical merits and challenges of updating the DMEF. Emphasis was placed on discussion of technical methods for characterizing and management of dredged material, including the development of freshwater sediment screening values. Two other developments have occurred which make revision of the DMEF timely: (1) addition of the lower Willamette River and the Duwamish River to the National Priorities List (NPL) by Region 10, EPA; and (2) Endangered Species Act (ESA) listings for salmonid species by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS). Inclusion of considerations of ESA-listed species into the testing and management framework may be useful for streamlining future consultations for dredging projects.

Meeting Agenda

The Workshop focus was to develop the framework and identify scope items and estimated costs required for updating and expanding the DMEF. The Workshop allowed participants to present their agency's vision of what the updated DMEF would include in order to make consistent determinations about sediment quality. Open debate of all issues was encouraged so that issues could be prioritized, accurately scoped, and costs estimated. The agenda is located in Appendix A.

Hart Crowser conducted telephone interviews with 14 RSET Workshop participants/members from 10 different agencies prior to the completion of the agenda. Each interviewee was asked the same six questions for consistency, and interviews lasted up to 30 minutes. Responses to interview questions are provided in Appendix B. We also reviewed the following pertinent literature: RSET issue papers, other regional DMEF and guidance manuals, and national guidance manuals (e.g., the Green Book, Inland Testing Manual, ARCS program report, etc.).

Attendance

A complete list of attendees is provided in Appendix C. In addition to those attending, Mr. Jim Reese and Mr. John Malek, co-chairs of RSET had received interest from several others (mostly state agencies in Idaho) for whom out of

state travel was a problem. Tribal representatives were invited but unable to attend. Attendance included members from the following organizations:

- Corps – NW Division and Portland, Seattle, and Walla Walla Districts, Waterways Experiment Station (WES);
- EPA Region 10;
- National Oceanic and Atmospheric Administration (NOAA) – NMFS Portland and Boise offices, NW Science Center;
- USFWS;
- Oregon Department of Environmental Quality (DEQ);
- Washington Department of Ecology (WDOE);
- Washington Department of Natural Resources;
- Port of Vancouver;
- Port of Portland;
- Port of Coos Bay;
- Severn Trent Laboratories;
- Hart Crowser – Technical Program Contractor; and
- Carie Fox Mediation – Facilitator.

Regional Dredging Team and Regional Sediment Evaluation Team

Regional Dredging Team. The Regional Dredging Team (RDT) as currently formed consists of representatives from the following Federal agencies: Corps, Northwestern Division (NWD); EPA Region 10; USFWS; NOAA/Office of Ocean and Coastal Resource Management; NMFS; and Department of Transportation/U.S. Maritime Administration. Other Federal and State agencies, and Tribal Governments, may participate as liaisons, as needed. The RDT is co-chaired by Corps of NWD and EPA Region 10.

The overall objectives of the RDT are to serve as a forum for policy and technical issue identification and resolution, implement recommendations, and communicate/coordinate with local dredging teams, as well as other stakeholders. An additional function of the RDT is to prepare guidance on the establishment of regional/local planning groups composed of federal, state, and local agencies and other stakeholders for development of dredged material management plans.

Regional Sediment Evaluation Team. The RSET, a multiagency group, has been formed under the auspices of the RDT to revise the existing regional DMEF for use by all NW Corps Districts, EPA Region 10, NMFS, USFWS, and other federal and state agencies that require sediment quality evaluation procedures. The RSET will expand and replace the Regional Management Team (RMT) defined in the existing DMEF.

WORKSHOP SESSION SUMMARY

Workshop participants agreed that the goal to develop a regional DMEF for the Northwest was an extremely worthwhile process. Although participants were realistic about the cost, there were virtually no signs of partial buy-in or hesitation. From the facilitator's point of view, this initial workshop began with a level of cohesion usually only reached after six months of laborious meetings.

In discussing what was needed to make this effort work, the group focused primarily on agency systems. In describing needs for better communication and greater trust, the emphasis was on the positive. Rather than describing a broken system that needs to be fixed, participants agreed that the DMEF is functioning, but needs to be strengthened. Primary weaknesses identified were the need for an improved and comprehensive process to make consistent and accurate management decisions, and the concern about individual agencies' adherence to the familiar. To cure each of these, the single most important factor is sustained management support. Sustained management support is necessary both for the funding of additional data collection and analysis, and to send a consistent message regarding flexibility and collaboration among agencies.

A systems analysis graph was developed to show the interconnectivity of the process and relationships required to successfully update the DMEF (Figure 1). This graph summarizes the participants' view of what will make the DMEF update process work, and what will not. Sustained management support and increased data analysis/compilation emerge as the single most important leverage points. Buffeting political changes and agency attachment to the familiar emerge as the most likely pitfalls of the process. This graph is unique in its strong growth pattern. There are only two factors that weigh against the project; otherwise, all factors are reinforcing or mutually reinforcing.

Based on the participants' description of their present situations, any input to the data field (not only gathering of additional data but, perhaps as importantly, compilation of existing data) will drive a strong reinforcing cycle of interagency trust and collaboration. The green lines indicate ways in which improvements to the present DMEF would directly increase such parameters as interagency trust

and management belief. The purples lines, with double-headed arrows, show mutually reinforcing relationships. For example, the more the agencies trust one another, the more the public trusts the agencies, and the more the public trusts the agencies, the more the agencies trust one another. The prevalence of green and purple indicates that inputs to this system will result in rapid resolution towards the output–interagency collaboration.

One of the few destructive cycles the participants identified had to do with individual attachment to the familiar and political change. Two factors could mitigate against the destructive cycles. First, if more scientific information is made available, staff and management belief (trust) will be increased, thus enabling individual decisions to have more certainty and flexibility. Second, sustained management support (which itself is related to staff and management belief) is seen as being effective in reducing attachment to the familiar. Both of these factors can ameliorate political change.

This following section presents a summary overview of each day's breakout sessions.

Day 1

The first two breakout sessions were designed to allow each attendee the opportunity to provide input on the "ideal" and "realistic" DMEF manual. The ideal breakout session was to gauge the support of the participants for having a regional DMEF. The realistic breakout session was designed to identify barriers such as staff availability, budgets, technical issues, and schedule constraints that would encumber the production and implementation of a regional DMEF.

Participants responded positively to these sessions and were actively involved in providing opinions and real world examples regarding ways to improve and update the DMEF. The updated DMEF is desired to provide a sediment characterization framework that provides comprehensive evaluation procedures, which could serve multiple objectives such as including testing for alternative disposal methods and sediment quality (Figure 2). The DMEF should also provide a consistent process to allow the RSET to make timely decisions regarding sediment disposal options, thus enabling dredging projects to move forward. The updated DMEF should include:

- Tiered testing approach to evaluating sediments;
- Comprehensive sampling and testing methods to adequately characterize sediment;

- Effects-based testing that will be protective of all species including endangered fish;
- Site-specific flexibility based on geographic and watershed issues;
- Freshwater and marine sediment interpretive guidelines and screening levels;
- Consistent evaluation procedures to serve multiple objectives;
- Water quality testing methods for disposal actions; and
- A mechanism to update the manual.

Participants expressed a perceived lack of trust among agencies, public, and tribes with respect to dredged material management decisions. Trust could be established by all agencies having input to the updated manual. Additionally, the agencies and services tend to be conservative (i.e., precautionary) when there is a lack of knowledge or doubt about the results or process. This lack of trust and conservatism affects the entire process, and ultimately the users of the DMEF find the process costly and ineffective because of the current lack of consistency and certainty in the decision making process.

Breakout Session Debrief

Two separate breakout sessions covering the topics of Process, Biology, and Chemistry were held on the afternoon of September 11, 2002. The purpose of these sessions was to allow participants an open opportunity to present the issues that they (and/or the agency they represent) saw as priorities that need to be addressed prior to the completion of a regional DMEF. The breakout session participants were encouraged to identify and discuss their highest priority issues requiring further evaluation as the process of updating the Regional DMEF moves forward. Each participant was able to attend two of the three sessions based on the participant's interest. This also enabled the breakout sessions to include a cross section of workshop participants with different views and technical expertise. The attendees for each of the Policy, Biology and Chemistry breakout sessions are listed in Appendix D.

Based on the results of the breakout sessions, a matrix was developed to summarize the issues that were presented and discussed. The matrix tables summarize the results of the Policy, Biological, and Chemical breakout sessions and indicate potential Scope of Work items required for updating the DMEF. The issues have been paraphrased to fit the table format and divided into "Main Issues" and "Sub Issues" for identifying objectives, a relative sense of the existing data gaps for addressing the issue, schedule, cost, what agency or group(s) would lead the effort, the product that may need to be produced to address the

issue, and a subjective sense of the "passion" held by the RSET participants to address this particular sub issue.

Policy and Process

The main issues and sub issues discussed and presented in the Policy breakout session are summarized in Table 1. The Policy session primarily discussed inter- and intra-agency support, trust, resource commitment, and responsibilities. The DMEF is presently designed to characterize sediments for open-water disposal. The participants believed that because there is a sediment characterization framework in place, the updated DMEF could be expanded to also include sampling and testing protocols to evaluate alternate disposal alternatives (i.e., beneficial uses) and potentially contaminated sediment cleanup investigations. Deciding the breadth of the updated DMEF is considered a short-term decision process, but developing the alternative testing methods and decision matrix will require a long-term effort.

The Policy sessions also identified specific scope items that are to be evaluated and addressed prior to and during the DMEF update. The majority of the Policy issues could be addressed within a year (see Recommendation Section). The following Policy issues were identified:

- Develop agency timelines for review and decision-making for sampling and analysis plans and sediment characterization reports;
- Determine the need for a continuous DMEF update process as the state of the science improves, and more data is gathered;
- Determine the need for a formal NEPA (EIS) process;
- Determine the need for a formal ESA consultation process to obtain a programmatic biological opinion;
- Define and produce a public involvement plan during the DMEF update process;
- Define a number of issues (e.g., recency, frequency, and ranking guidelines, and decision documentation process) that are currently in the manual, but require clarification and updating
- Determine a decision framework for beneficial uses of dredged material; and
- Determine other agencies' on-going efforts and how to incorporate or expand those efforts to include the best science approach.

In addition to these Policy issues, the updated DMEF will likely need to include a number of technical issues to be assessed and data gaps to be completed. The following biology and chemistry sections describe the issues to be evaluated.

Biology Breakout Sessions

The main issues and sub issues discussed and presented in the Biology breakout session are summarized in Table 2. The main issues discussed in the breakout sessions revolved around:

- Sediment bioassays sensitivity including sensitivity to unique contaminants;
- Sediment bioassay standardization;
- Bioaccumulation issues for tissue residue data interpretation;
- Bioaccumulation issues for additional test development;
- ESA linkages to interpreting sediment bioassays and bioaccumulation tests;
- Evaluation of alternative beneficial uses of dredged material;
- Use and acceptance of rapid screening tools for sediment chemistry and toxicology; and
- Appropriate use and interpretation of biological community study data.

The following section presents each sub issue in more detail, focusing on the objective of the sub issue. The remaining biological components of the matrix can be found directly on Table 2.

Sediment Toxicity Testing (General)

Are current tests protective enough for non-ESA species? The objective is to evaluate the sensitivity of current sediment bioassay protocols with regards to available toxicological information regarding the sublethal toxicity of sediment contaminants and whether the current protocols are sensitive enough to capture these responses. The objectives of the Tier III and Tier IV Biological Evaluations are to assess potential risk to the environment at the dredged material disposal site. This evaluation will be conducted with consideration given to specific objectives of the Tier III and Tier IV Biological Evaluations.

Are current tests sensitive to unique region specific contaminants? The objective is to evaluate the current sediment bioassay protocols with regards to available toxicological information regarding the toxicity of unique regional contaminants. Examples provided during the biology breakout sessions were the

Organophosphate Pesticides (O.P. Pesticides) used in Idaho/Eastern Washington and explosive compounds found on current and inactive military facilities. This evaluation will be conducted with consideration given to specific objectives of the Tier III and Tier IV Biological Evaluations.

Sediment Toxicity Testing; Freshwater Methodologies

Sensitivity of 10-day versus longer term tests for amphipods and midges. The objective is to determine whether the proposed use of longer-term bioassay procedures for Tier III Biological Evaluations for amphipod and midges are justified by the increase in toxicological information (sensitivity and information on sublethal endpoints) that would be provided by these tests.

Are the sensitivities of current tests appropriate for intended uses? The objective is to evaluate whether the current sediment bioassay protocols are sensitive enough for achieving the intended use of the Tier III and Tier IV Biological Evaluations which are to assess potential risk to the environment at the dredged material disposal site.

Develop additional tests as necessary. The objective of this task is to develop additional biological tests if it is determined by the previous evaluations that the current suite of biological tests is insufficiently sensitive to meet intended uses.

Bioaccumulation Testing and Data Interpretation Issues

Are the data generated by using current protocols utilizing clams and worms sufficient for use as surrogates for fish and higher trophic order species? The objective of this task is to evaluate whether the current sediment bioaccumulation protocols recommended for Tier III and Tier IV Biological Evaluations, which recommend the use of two species, generally one bivalve (filter feeder) and one deposit (sediment ingesting) species that usually involves the use of a polychaete or oligochaete worm are appropriate surrogates for evaluating bioaccumulation potential in fish and higher trophic order species.

Develop second freshwater bioaccumulation species and protocol. The objective is to develop a second freshwater bioaccumulation species in addition to the standard test organisms, the oligochaete (*Lumbriculus variegates*). There have been concerns raised regarding the limited tissue mass available for these organisms at the conclusion of the standard laboratory 28-day freshwater bioaccumulation test which limits the amount of chemical analysis that can be performed on the tissue and the need for the development of a second bioaccumulation organism without the tissue weight limitations. In addition,

having two species will meet the Inland Testing Manual goal of having two species with different feeding guilds included in a Tier III bioaccumulation evaluation.

Develop tissue residue interpretive guidelines for ecological and human health endpoints. The objective of this task is to develop interpretative guidelines for evaluating the results of tissue residue data resulting from Tier II and Tier IV Bioaccumulation Testing. The current protocols provided in the Inland Testing Manual are based on either statistically significant difference in accumulation versus a reference material or a comparison with an action level (e.g., FDA Action Levels for Poisonous or Deleterious Substances in Human Food). These protocols may be inconsistent with state regulations (e.g. State of Oregon Acceptable Risk Levels for individual carcinogens and cumulative carcinogenic risk) and recent ecological toxicity data for protection of host organisms and its predators.

Establish tissue levels protective of ESA species. The objective of this task is to develop interpretative guidelines for evaluating the results of tissue residue data for the protection of ESA Species.

Endangered Species Act Issues

Are current sediment toxicity testing methods and protocols appropriate for assessing ESA Species risks? The objective of this task is to evaluate whether the current sediment bioassay protocols are sensitive enough for assessing potential risks to ESA species within the context of the intended uses of the Tier III and Tier IV Biological Evaluations.

Develop appropriate tests and interpretative guidelines. The objective of this task is to develop additional biological tests or interpretative guidelines for test results if current methods and protocols are determined to be insufficient to protect ESA species.

Freshwater Sediment Screening Level Development

Develop toxicity endpoint screening levels. The objective of this task is to develop benthic toxicity endpoint screening levels for evaluating dredged material for freshwater sediments. Consideration will be given to recent initiative in Washington State to develop Freshwater Sediment Screening Levels.

Develop bioaccumulation endpoint (human health and ecological) screening levels. The objective of this task is to develop bioaccumulation endpoint screening levels for freshwater sediment protective of both human health and ecological endpoints.

Grain Size Exclusion

Should current grain size exclusion criteria be revised? The objective of this task is to evaluate whether the existing PSDDA and LCRMA Grain Size Exclusion Criteria should be revised or maintained. There were concerns raised by Federal Resource Agencies that the grain size exclusion may not be protective of potential bioaccumulation risks to ESA species.

Beneficial Use Determination

Consider alternative types of beneficial uses of dredged material and incorporate into decision-making framework. The objective of this task is to evaluate alternative beneficial uses of dredged material (e.g., beach nourishment, habitat enhancement, etc.) and determine the best method (if possible) to incorporate such evaluations into the existing dredged material evaluation framework.

Are tests available to make beneficial use determinations for alternative uses? The objective of this task is to assess whether there are currently available tests to make beneficial use suitability determinations for the alternative beneficial uses evaluated in the previous task.

Benthic Community Assessment

When, where, and for what purpose are such assessments appropriate? The objective of this task is to evaluate the appropriate uses of benthic community assessment methodologies for the purposes of dredged material characterization and/or disposal site monitoring in a diverse region with a variety of marine/estuarine/freshwater systems.

Develop appropriate data evaluation techniques. The objective of this task is to develop or recommend appropriate benthic community evaluation techniques or guidelines based on the different types of aquatic habitats present in this region.

Rapid Screening Methods for Chemistry and Toxicity

Are Rapid Screening Assessment methods currently available and implementable? The objective is to critically evaluate the screening tools that are available for the rapid assessment of sediment chemistry and toxicity to determine whether these tests are sensitive and reliable enough for use as surrogates for more expensive analytical chemistry or bioassay testing under the Tier II and Tier IV Biological Evaluations.

Additional Issues

There are other biological issues (e.g., reference site designation) that were not brought up at the RSET Workshop that may require evaluation to complete the Regional DMEF Manual. We recommend that a data gap analysis be conducted during the next phase of this project to ensure all of the necessary biological issues have been identified and addressed.

Chemistry Breakout Sessions

The main and sub issues discussed in the Chemistry Sessions are summarized in Table 3. The issues presented on Table 3 are further discussed below.

Field/Analytical Methods

Dredged Material Management Unit (DMMU) Definition. The participants suggested that the present guidelines and underlying assumptions regarding the size (in cubic yards), depth intervals, sampling density, and compositing schemes for DMMUs should be reviewed. In particular, some participants thought finer-scale sampling would be more appropriate. Differences or similarities in sampling approaches between dredged material characterization and sediment cleanup investigations should be discussed further.

Data Variability and Uncertainty. Participants wanted clarification on interpreting data variability over time and space in dynamic riverine and estuarine environments. Quantifying statistical variability (both field and lab variability) using past sampling data was discussed. Some participants suggested considering a statistical approach to suitability determinations (i.e., confidence intervals) rather than the current sample-by-sample comparisons to SLs. Further discussion would be needed to determine the merits of such an approach, and how a statistical evaluation would be structured.

Special Analytical Methods. Participants discussed whether any special analytical methods should be considered for inclusion in the DMEF update. For example:

- Should tributyltin (TBT) be analyzed on a bulk sediment or pore-water basis?
- Should polycholorinated biphenyls (PCBs) be analyzed on an Aroclor or congener basis?
- Are rapid field-screening analytical techniques useful, or do they contain too much uncertainty?

- Are lipid bags or polypropylene sheets useful during water quality monitoring, and are they reliably correlated with water column concentrations?

Chemical Analyte List

Process to Focus Analyte List. DMEF guidelines should allow the users to narrow analyte lists based on existing data showing concentrations below levels of concern. If this flexibility is allowed, then all of the districts need clear guidance in order to consistently interpret data.

Process to Add New Analytes. DMEF guidelines should allow the regulatory agencies to add analytes based on existing data that confirms the presence of other site-specific chemicals of concern or source information that indicates usage and a likelihood for release. However, interpretive criteria regarding "exotic" chemicals would need to be developed if none exist. Participants commented that users should not be asked to analyze constituents that cannot be interpreted (i.e., analysis for "research" purposes).

Special Analytes. DMEF guidelines should provide enough flexibility to tailor site-specific analyte lists (e.g., TBT, organophosphorus pesticides, dioxins, etc.). Region-specific analyte lists may need to be developed (e.g., agricultural chemicals in Walla Walla district).

Total Petroleum Hydrocarbons (TPH). Participants questioned whether a screening level for TPH needed to be developed, or if the existing screening levels (SLs) (e.g., for PAHs) were sufficient to monitor the primary toxic components of TPH. There may also be a need to consider physical effects, such as sheen and gill clogging. An objective is to determine whether it is possible to develop a reliable SL for TPH, considering the wide range of composition (e.g., gas, diesel, motor oil, etc.), degree of weathering, degree of combustion, etc.

Screening Levels (General)

Cost-Effectiveness/Reliability. This objective is to develop a process to ensure that SLs are accurate enough to enable reliable management decisions. This would include agreement on balancing the error rates of false positives and false negatives to ensure that we are protecting the environment but not causing unnecessary and costly characterization requirements.

Freshwater Screening Levels. See Biology Section above.

ESA Endpoints. See Biology Section above.

Carbon Normalization. Need to evaluate whether carbon normalization of SLs for certain organic chemicals increases the reliability of the SLs. WDOE has done much work on this issue and should be consulted.

Detection Limits. The DMEF guidance regarding the sensitivity of analytical methods needs to be clarified and consistently interpreted by the districts. In particular, does the DMEF require the Practical Quantitation Limit (PQL, a.k.a. Reporting Limit) or the Method Detection Limit (MDL) to be below the SL?

Disposal Site-Specific Screening Levels. Participants discussed the idea of developing different SLs for different types of disposal sites or beneficial reuse options (e.g., open-water disposal, dispersive or non-dispersive, habitat restoration sites, beach nourishment, etc.) considering that different exposure scenarios are operating at upland sites, shallow water versus deep water, nearshore versus offshore, etc.

Bioaccumulation Screening Levels

Regional Tissue Monitoring. Regional tissue monitoring programs may be required to collect empirical data that allow regulators to better determine which chemicals are accumulating at which trophic levels. The regional monitoring data would ultimately be used to focus and reduce uncertainties associated with expensive bioaccumulation testing. The scope of this type of monitoring program would need to be developed.

Target Analyte List. A target analyte list for bioaccumulation testing needs to be developed. Also, we need to agree on a process and criteria for listing bioaccumulative chemicals (i.e., regional monitoring data versus theoretical chemical behavior, etc.) and for ranking and prioritizing bioaccumulative chemicals (i.e., priority given to those that biomagnify; consideration of human and wildlife receptors, consideration of uncertainty, etc.).

Ambient Concentrations. A process for addressing regional ambient sediment chemical distributions that contain some level of residual risk (e.g., DDT in Willamette River, arsenic in Puget Sound, etc.) needs to be developed. In addition, we will need to evaluate how to separate site risk from regional ambient risk. Participants also requested clarification regarding the placement of dredged material in an open-water disposal site (or other site) if the contaminant concentrations in the dredged material are similar to the disposal site, but both contain some residual level of risk (i.e., are we allowing risk to perpetuate?).

Database Management

A regional sediment quality database needs to be developed to include sediment chemistry, toxicity, and tissue data. Issues regarding standardization for data input and retrieval, database structure and organization, and administration of the database will need to be addressed. A number of other tasks that were recommended by participants (e.g., development of freshwater SLs, evaluation of reliability of SLs, characterization of ambient conditions, carbon normalization, and many others issues) would rely heavily on database queries.

DISCUSSION OF RSET ISSUE PAPERS

Five issue papers were developed by RSET members prior to the Workshop and were discussed during the afternoon session on Day 2 (Appendix E). Many of the issues were discussed in the breakout sessions; however, this session allowed issues to be further discussed and clarified. The group discussed and agreed to use the Public Involvement issue paper (developed by Jennifer Sutter, DEQ) as the basis for the public involvement process to be used during the DMEF update. This paper is to be finalized prior to the December meeting. The other papers included technical and policy issues that will be addressed during the update process.

PATH FORWARD

This section provides recommendations for additional Scope of Work items that would likely be required to enable the RSET members to update the DMEF that will provide a comprehensive sediment characterization framework from which consistent management decisions could be made. It was strongly suggested that a contractor facilitate these efforts.

Prepare Clarification Memos

Several issues were identified that may already be addressed by existing DMEF guidance and can therefore be completed in a short timeframe for low costs. The existing DMEF guidance should be reviewed to ensure that these following issues are adequately and clearly covered.

- Draft an agency partnering agreement;
- Better definition of recency, frequency, ranking, and Tier I guidelines;
- Process to focus analyte list;

- Process to add new analytes;
- Treatment of detection limits (PQLs and MDLs);
- Public involvement process to update DMEF; and
- Re-evaluation and Definition of grain size exclusion criteria.

Interim Process. Clarification memos should be prepared and distributed to RSET members across districts to ensure that the guidance is being consistently implemented until DMEF is finalized.

Set Up Regional Chemistry/Toxicity Database

A regional chemistry/toxicity database is fundamental to organizing data in a consistent and accessible manner to allow more informed decisions to be made by RSET as the new guidance is developed, and to provide future updates to SLs and other guidelines as needed. Compiling and QC-checking data is a laborious and time-consuming process that should be started as soon as possible. A working database will be necessary to accomplish a number of other RSET objectives, including:

- Development of SLs for both freshwater and marine;
- Evaluation of the reliability of SLs (i.e., error rates);
- Evaluation of carbon-normalization;
- Evaluation of data variability/uncertainty;
- Assessment of regional "ambient" concentrations; and
- Compilation of regional tissue monitoring data.

A custodial agency should be identified to determine who would maintain the database. A Database Committee should be appointed to research the organizational structure, input parameters, and existing data sources.

Appoint Committees to Research Specific Issues

Several issues require reviewing the status of ongoing work to understand the state of the art and recent developments in science and/or policy. Committees should be appointed to conduct these reviews and then report back to RSET with a recommendation for next steps. In particular, committees are recommended to review the status of ongoing regional and national initiatives, identify data gaps, and recommend additional research and policy initiatives to the RSET in the following areas:

- TPH SLs;
- Regional tissue monitoring programs;
- Bioaccumulation chemicals of concern;
- Tissue residue interpretive guidelines for human health and ecological endpoints;
- Freshwater SLs;
- Alternate disposal-specific exposures and evaluation criteria (e.g., beneficial use, habitat creation, upland, CAD); and
- Definition of DMMUs.

Interim Process

It is recommended that dredged material continue to be managed using existing guidance (e.g., PSSDA, LCRMA, etc.) until issues are resolved during the regional DMEF process. As issues are resolved, they can be incorporated into the DMEF with technical addendums. It is suggested that annual review meetings are conducted to provide a process through which these changes can be made.

December Meeting

It was determined that a follow-up meeting in December was necessary to keep the process moving forward, complete some of the less controversial and time consuming tasks, determine scope of work items, form technical sub-committees, review and approve an agency partnering agreement and public involvement plan, and begin the tribal involvement process. The meeting is tentatively scheduled to occur on December 10 and 11, 2002 at the Portland District office. A preliminary draft agenda is presented in Appendix F.

Draft Partnering Agreement

The draft partnering agreement summarizes participants' process recommendations made during the Friday session. Items in italics are the facilitator's recommendations, made subsequent to the RSET meeting.

Please note this Partnering Outline will be approved, if possible, at the December 10th meeting. Therefore, it is important that comments pertaining to this agreement be sent along with comments pertaining to the substantive elements of the report.

Draft Partnering Outline Based on RSET Workshop

1. Context: RSET is advisory to the RDT.
2. Goal: The goal of the RSET is to amend the DMEF. To the extent possible, the outcome is one regional manual that incorporates the dredged material assessment methodology and interpretive guidelines for all regulators and users in Washington, Oregon, and Idaho.
3. Legal Effect: The principles outlined below will guide the RSET deliberations, subject to RDT amendment. This document is not intended to have, nor will it have, legal effect.
4. *Amendments: With the approval of the RDT, amendments to this agreement will be made by consensus of the RSET.*
5. *Membership: RSET is an interagency group. Each agency is primarily represented by a single contact person. The agencies, with contact person, are:*
    a. *Jim Reese, USACE*
    b. *John Malek, EPA*
    c. Etc.
6. Public Meetings: The meetings are open to the public.
7. Consultant Support: As resources allow, RSET will be supported by a technical consultant group, including a neutral facilitator to focus efforts, identify issues, and continue momentum without one agency offending another.
8. *Organizing Team: The "organizing team" includes Jim Reese, John Malek, and, as resources allow, the consultant group and a neutral facilitator.*
9. Agendas: Meeting agendas for the upcoming meeting will be outlined at the close of each meeting. The agenda will be refined by the organizing team, then sent out as a draft to RSET and interested parties. Suggestions will be incorporated by the organizing team.
10. Meeting Report: A meeting report will be put together by the organizing team and generally distributed within two weeks of the meeting.
11. *Participation: Initially, all attendees, whether RSET members or not, will participate fully and will receive advance materials and opportunities for review. Should participation become unwieldy, RSET members may limit nonmember participation at REST meetings.*
12. Meeting Frequency: Meetings will be quarterly and, generally, for one day.
13. Meeting Location: Every attempt will be made to site the meetings fairly, in order to maximize attendance by as many members, over time, as possible.

14. *Follow-Up Conference Call: In order to maintain involvement of those who cannot attend a given meeting (e.g., if the meeting is held in Idaho, and State of Oregon members cannot attend, or vice-versa), there will be a regularly-scheduled follow-up conference call three weeks after each quarterly meeting. The organizing team and any non-attending members will review the minutes of the past meeting and the draft agenda for the next meeting, and will flag issues for upcoming meetings. The follow-up phone call is not a decision-making forum.*

15. Attendance:
    a. Participants who attend agree to minimize "exits" to other meetings, including cell phone calls;
    b. *Members who cannot attend will make every effort to participate in the follow-up telephone conference; and*
    c. *Assuming the quarterly meetings are fairly distributed geographically, a member who misses three consecutive quarterly meetings and the three follow-up conference calls will no longer be a member.*

16. Decision-Making: The goal is to forward consensus decisions to the RDT. If consensus cannot be reached, the unresolved issue will be elevated to the RDT.

17. Subcommittees: The goal is to do as much work as possible between the RSET meetings. This will require use of subcommittees, both ad hoc and standing. Either RSET itself, or the organizing team, can solicit participation in a subcommittee. Subcommittee membership is not limited to RSET members. Subcommittee work is brought to the full RSET for review and approval.

18. Ongoing Improvement: The RSET will identify opportunities for change and make recommendations on an ongoing basis.

19. Public Involvement: Public involvement will be conducted (with some modifications by RSET) as outlined in the Public Involvement Issue Paper that Jennifer Sutter (DEQ) prepared.

Table 1 - Policy Issues to be Evaluated for DMEF Update

Main Issue	*Sub Issue*	*Data Gaps*	*Tasks Required*	*Schedule*	*Who should Lead/ other players*	*Product*	*Costs*	*Passion*
Project Timelines	Timelines for technical reviews and decisions are either not prescribed or met	Timelines presently not adhered to	Develop agency review timeline. Identify problems and resolve.	Short	Corps/EPA clarify timelines	Place language in DMEF text.	Low	High
Scope of Uses For Manual	Goal to provide information that is comprehensive, timely, and accurate	New tests and FW and Marine screening levels	Incorporate additional scope items from Biological and Chemical	Short	RDT/RSET	Updated DMEF	High	High
	Does DMEF include alternate disposal determination testing (e.g., Upland testing, fill, CAD)?	Pathway Analysis	Review work in progress. Effort to be determined by RSET	Short	Collaborative effort by RSET. Final decision by RDT.	Need to include alternate testing methods/evaluation criteria	Medium	High
Beneficial Uses (See Also Table 2)	Decision framework how to evaluate beneficial uses.	No discussion in DMEF	Develop toolbox; evaluate options	Medium	WES	Regional Guidance Document	Low	High
Continuous Update Process		Need yearly meetings	Schedule meetings	Continuous	Collaborative effort by RSET. Final decision by RDT.	Meeting minutes and decision papers	Low	High
Agency Resource Commitment			Scope of work; define agency roles	Short	RDT	Partnering agreement	Low	High
List Management Duties Each Agency is Responsible For	Define who involved and process for dispute resolution	Review team does not include all agencies/services	Develop charter, time & staff needs	Short	RDT	Partnering agreement	Low	High, quick resolution sought
Invasive Species Management	Does DMEF include assessment for NIS?	Not presently considered	Review work in progress	Long	NMFS	Regional Guidance Document	High	Medium
Frequency; Recency Ranking Guidelines	How do we institutionalize existing knowledge?	Definitions unclear	Prepare white paper, define and agree	Medium	RSET	Yearly? Status report on sediment characterization results	Low	High - Need clarity
	How to make data available for decision making?	Need database. Secure website?	Regional database	Medium	RSET	Database and website	Low	High
	Allow for reason to believe based on site history	Consistency, trust	Summarize existing site data	Medium	RSET	Continue working together as RSET	Low	Clarify

Please refer to notes on last page of this table.

Main Issue	*Sub Issue*	*Data Gaps*	*Tasks Required*	*Schedule*	*Who should Lead/ other players*	*Product*	*Costs*	*Passion*
Disposal Site Specific Screening Levels	How incorporated?	No defined process or monitoring outside of Washington State	Identify disposal sites. Develop monitoring programs	Medium	EPA, RDT, Ports?	Regional Guidance Document	Medium	High
Document Decision Process	SAP; results; dredge activities; project specific requirements	Not presently occuring	Documentation needs; level of detail; responsibility	Short	RSET	Regional Guidance Document	Low	High
	Make DMEF thorough enough for decision making	More or better testing protocals	Update DMEF	Long	RSET	Updated DMEF	High	High
Does It Require EIS		Need decision	RDT to make decision	Short - decision; Medium - process	RDT, input from RSET	To be determined	Low	High
Does It Require ESA Consultation		Need decision	RDT to make decision	Short - decision; Medium - process	RDT/NMFS/USFW, input from group	To be determined		High
Public Involvement	Identify Process	Finalize plan	Develop public involvement plan	Short	RSET	Public meetings	Document - Low; Process - medium	High
Long-Term Monitoring	Which agency is responsible?	Different disposal locations have varying monitoring programs	Identify who is responsible - when & where; Watershed issues; Tease out different types of monitoring issues.	Long	EPA/Corps/States	Monitoring requirement documents to be prepared for disposal locations.	Medium	High

Schedule Note:

Short = < 1 year
Medium = 1-3 years
Long = 3-5 years
Continuous

Cost Note:

Low = < $50,000
Medium = $50,000 - $100,000
High = >$100,000

Table 2 - Biological Issues to be Evaluated for DMEF Update

Main Issue	*Sub Issue*	*Data Gaps*	*Tasks Required*	*Schedule*	*Who should Lead/ other players*	*Product*	*Costs*	*Passion*
Sediment Toxicity Testing (General); Marine and Freshwater Protocols.	Are current tests protective enough for non-ESA species (e.g. sub-lethal endpoints)?	Data on the sensitivity of current test protocols with regards to sublethal endpints.	Literature review, evaluate existing testing programs and protocols, identify existing options, lab bioassay development effort, and field verification tasks.	Short = Literature Review Medium/Long = Lab and Field Efforts	Services, WES	Sediment Toxicity Test Protocol Assessment Report or Recommendation and Development of for Additional Tests	Low = Literature Review High = Lab and Field Efforts	High
	Are current tests sensitive to unique region specific contaminants (e.g. explosive compounds, O.P. pesticides)?	Data on the sensitivity of current test protocols to unique contaminants.	Identify unique contaminants important to regions, literature review, identify existing options, lab bioassay developeent and field verification tasks.	Short = Literature Review Medium/Long = Lab and Field Efforts	Corps (Walla Walla), NMFS, WES	Sediment Toxicity Test Protocol Assessment Report or Recommendation for Additional Tests	Low = Litertaure Review High = Lab and Field Efforts	High
Sediment Toxicity Testing; Freshwater Methodologies.	Sensitivity of 10-day vs. longer term tests for amphipods and midges.	Assess sensitivity of 10-day bioassays to multiple classes of compounds versus longer term bioassays.	Literature review, evaluate existing testing programs and protocols, lab and field verification tasks.	Short = Literature Review Medium = Lab and Field Efforts	EPA, Corps	Sediment Toxicity Test Protocol Assessment Report or Recommendation for Revision of Test protocols	Low/Medium	Medium
	Are the sensitivities of current tests appropriate for intended uses?	Data on sensitivity of current tests.	Literature review, identify appropriate endpoints, evaluate existing programs, field and lab verification tasks.	Short = Literature Review Medium/Long = Lab and Field Efforts	Corps, EPA, WDOE, DEQ	Sediment Toxicity Test Protocol Assessment Report or Recommendation for Additional Tests	Medium	High
	Develop additional tests as necessary.	Sediment bioassay development.	Lab test development and field verification tasks.	Medium to Long; Depends on above.	Corps, EPA, WES	Sediment Toxicity Test Protocol Recommerndations	High	High

Please refer to notes on last page of this table.

Main Issue	*Sub Issue*	*Data Gaps*	*Tasks Required*	*Schedule*	*Who should Lead/ other players*	*Product*	*Costs*	*Passion*
Bioaccumulation Testing and Data Interpretation Issues.	Are data generated by using current protocols utilizing clams and worms sufficient for use as surrogates for fish and higher trophic order species.	Comparison of bioaccumulation potential between bivalve/worms and fish.	Review model, review literature, review existing programs, regional initiatives, and national guidance	Short	Corps, EPA	Sediment Bioaccumulation Toxicity Testing Protocol Assessment Report or Policy Recommedations	Medium	High
	Develop second freshwater bioaccumulation species.	Protocol for second freshwater bioaccumulation species.	Review existing programs, literature review, review existing progress (Corbicula); lab and field test validation tasks.	Short to medium	WES	Sediment Bioaccumulation Toxicity Testing Protocol Recommedations	Medium	High
	Develop tissue interpretative guidelines for ecological and human health endpoints.	Lack of appropriate tissue interpretative guidelines for assessing human health and environmental risks.	Literature review, review existing methods, regional initiatives, and national guidance, develop human health and predatory wildlife exposure parameters.	Medium to Long	Human Health = EPA, DEQ; Eco = EPA, Services	Interpretaive Guidelines for Tissue Residue Levels for Protection of Human Health and Ecological Receptors.	Medium	High
	Establish tissue levels protective of ESA species	Lack of appropriate tissue interpretative guidelines for protection of ESA species.	Literature review, review existing methods, regional initiatives, and national guidance, develop wildlife exposure parameters for ESA species.	Medium to Long	Services	Interpretaive Guidelines for Tissue Residue Levels for Protection of ESA species.	Medium	High
Endangered Species Act Issues	Are current sediment toxicity testing methods and protocols appropriate for assessing ESA Species risks?	Lack of data on whether current test methods are protective of ESA species.	Review existing tests, review literature, test development; interagency coordination.	Medium	Services, Corps, EPA	Sediment Toxicity Test Protocol Assessment Report or Policy Recommendations	Medium	High
	Develop appropriate tests and interpretative guidelines	Lack of appropriate test methods and interprative guidleines to assess ESA species risk.	Review existing tests, test development; lab and field work, interagency coordination.	Medium to Long	Services, Corps, EPA	Sediment Toxicity Testing Protocol Assessment Report and Interpretative Guidelines.	High	High

Please refer to notes on last page of this table.

Main Issue	*Sub Issue*	*Data Gaps*	*Tasks Required*	*Schedule*	*Who should Lead/ other players*	*Product*	*Costs*	*Passion*
Freshwater Sediment Screening Level Development	Develop Toxicity Endpoint Screening Levels for Freshwater Sediments	Lack of appropriate freshwater screening levels.	Literature review, evaluate existing programs, field and lab work, interagency coordination.	Short to Medium	Corps, EPA, WDOE, DEQ	Freshwater Sediment Toxcity Screening Levels	Medium	Very High
	Develop Bioaccumulation Endpoint (Human Health and Ecological) Screening Levels for Freshwater Sediments	Lack of appropriate method for developing bioaccumulation screening levels.	Literature review, evaluate existing programs, develop human health and predatory wildlife exposure parameters, field and lab work, interagency coordination	Medium to Long	Corps, EPA, WDOE, DEQ, WES	Freshwater Bioaccumulation Screening Levels	Medium to High	Very High
Grain Size Exclusion Criteria	Should current grain size exclusion criteria be revised?	Data on whether current grain size exclusion criteria is appropriate.	Literature review, evaluate existing programs and methods, lab and field verification tasks.	Short to medium	This group	Grain Size Exclusion Policy Recommendation.	Low	High
Beneficial Use Evaluation	Consider alternative types of beneficial uses and incorporate into decision-making framework	Lack of discusssion of alternative beneficial uses and appropriate evaluation framework.	Literature review; interview users; evaluate existing programs and methods.	Short	WES, Corps, States	Recommendations for Alternative Benficial Uses and How to Incorporate Into Decision-making Framework.	Low	High
	Are tests available to make benficial use detrminations for alternative uses?	Lack of suitable tests for alternative beneficial uses and appropriate evaluation framework.	Literature review; interview users; field and/or lab studies	Short to Medium	WES, Corps, States	Beneficial Use Test Protocol Recommendation.	Low	
Benthic Community Assessment	When, where, and for what purpose are such assessments appropriate?	Appropriate uses for these methods and benthic community data for this region.	Literature review; evaluate existing programs and methods.	Medium	EPA, States	Benthic Community Assessment Guidance.	Low	Low
	Develop appropriate data evaluation techniques	Lack of appropriate evaluation protocols.	Literature review, evaluate existing programs and methods, field verification studies.	Medium	EPA, States	Benthic Community Assessment Protocol Recommerndations	Medium	Medium

Please refer to notes on last page of this table.

Main Issue	*Sub Issue*	*Data Gaps*	*Tasks Required*	*Schedule*	*Who should Lead/ other players*	*Product*	*Costs*	*Passion*
Rapid Screening Methods for Chemistry and Toxicity	Are Rapid Screening Assessment methods currently available and implementable?	Lack of data on sensitivity, varability, and applicability of test methods.	Literature review; evaluate existing programs and methods, lab and field studies	Short to Medium	WES	Rapid Screening Methods and Recommendations	Low	Medium
Where Should Limited Resources Be Spent	Developing new tests	TBD, continuing.	Literature review; interview users; identify objectives.		This group	Policy Recommendatiuons		Low
	Developing new Screening Levels	TBD, continuing.	Literature review; interview users; identify objectives.		This group	Policy Recommendatiuons		High

Data/Jobs/Portland District Corps/RSET J-15325/Report/Matrix (Biology Table)

Schedule Note:

Short = < 1 year
Medium = 1-3 years
Long = 3-5 years

Cost Note:

Low = < $50,000
Medium = $50,000 - $100,000
High = > $100,000

Table 3 - Chemical Issues to be Evaluated for DMEF Update

Main Issue	*Sub Issue*	*Data Gaps*	*Tasks Required*	*Schedule*	*Who should Lead/ other players*	*Product(s)*	*Costs*	*Passion*
Field/ Analytical Methods	DMMU definition	None	Review current definitions & assumptions; evaluate appropriateness	Short	RSET	Revised Manual, if needed	Low	Medium
	Data variability/ uncertainty	Field & analytical variability	Develop statistical approach to assess variability; Evaluate use of confidence intervals in suitability assessment (Policy call)	Short	EPA	Revised Manual, if needed	Low	Medium
	Special analytical methods (e.g. TBT, PCB congeners, Lipid Bags, etc.)	Potential lack of SLs for some analytes; uncertain representativeness for some methods	Review EPA efforts underway; Identify other methods and objectives	Short	EPA/NMFS	Revised DMEF analytical methods, or case-by-case implementation of special methods	Low to High, depending on degree of field verification needed for method development	Low to Medium
Chemical Analyte List	Process to focus analyte list	None	Review and clarify process; implement consistently across districts	Short	Corps/EPA	Clarification memo for distribution	Low	Medium
	Process to add new analytes (e.g. presence and interpretive criteria)	Potential lack of SLs and regional distribution data for some analytes	Review and clarify process; implement consistently across districts; develop interpretive criteria as needed	Short	Corps/EPA	Clarification memo for distribution	Low to Medium, depending on the need for regional studies to assess chemical presence	High
	Special Analytes (e.g. TBT, Dioxin, OP Pests)	Potential lack of SLs and regional distribution data for some analytes	Review and clarify process; implement consistently across districts; develop interpretive criteria as needed	Short	Corps/EPA	Clarification memo for distribution	Low to Medium, depending on the need for regional studies to assess chemical presence	High
	Add TPH? (physical/chemical effects)	TBD, based on literature review; variable toxicity due to fuel type, weathering, etc.	Review existing literature, regulatory approaches (i.e. WDOE Toxics), ongoing studies	Short	DEQ/WES/EPA	Summary report with recommendation; if yes, develop TPH SLs	Low for research; lab and/or field studies are beyond scope	Medium

Please refer to notes on last page of this table.

Main Issue	*Sub Issue*	*Data Gaps*	*Tasks Required*	*Schedule*	*Who should Lead/ other players*	*Product(s)*	*Costs*	*Passion*
Screening Levels (General)	Ensure Cost-effectiveness & Reliability	Some chemicals may not have sufficient synoptic chemical/biological data	Run WDOE statistical analysis; Policy decision regarding acceptable error rates	Short	RSET	Summary report with statistical analytical results	Medium	High
	Freshwater SLs Needed	Limited(?) synoptic data for freshwater in Pacific NW	Compile and QC database; Perform AET (or other) analysis	Medium	EPA/ WDOE	Freshwater SLs and MLs	Medium	High
	ESA Endpoints	See Biological Issues						
	Carbon-Normalize?	None	Run SEDQUAL statistics with and without normalization; compare reliability	Short	WDOE	Summary report with recommendation	Low	High
	Required detection limits (MDL vs. PQL)	None	Review and clarify process; implement consistently across districts	Short	Corps/ EPA	Clarification memo for distribution	Low	Just do it.
	Disposition-Specific SLs (e.g. Open-water, habitat restoration, beach nourish)	Some exposure pathways may not be well defined	Define exposure pathways and receptors for each disposition; develop evaluation protocols and interpretation criteria	Medium to Long	WES/ EPA/ RSET	Disposition-Specific SLs	Medium	High
Bio-accumulation SLs	Regional Tissue Monitoring	Insufficient regional tissue monitoring data to focus bioaccumulation testing	Compile and QC tissue database; Develop scope and funding for tissue monitoring program	Long	FWS/ RSET	Periodic monitoring reports; growing database of empirical data	High	High
	Target BAC Analyte List (High, Medium, Low)	Insufficient regional tissue monitoring data (see above)	Review upcoming EPA report (marine specific, applicability to FW metals?)	Short, Continuously Updated	EPA	Target BAC Analyte List; Updated per regional monitoring data; Ultimately develop BAC SLs	Low	High
	Residual Risk in Ambient Concentrations (Local Background)?	Not all districts have viable disposal areas; risk analysis is contingent on BAC SL development	Evaluate reference site data. Implement ongoing monitoring of disposal sites. May require policy decision.	Contingent on BAC SL development	RSET (WDNR, ODSL?)	Possible adjustment of some BAC SLs to ambient background	Medium	High

Please refer to notes on last page of this table.

Main Issue	*Sub Issue*	*Data Gaps*	*Tasks Required*	*Schedule*	*Who should Lead/ other players*	*Product(s)*	*Costs*	*Passion*
Chemistry/Tox Database Management		None	Identify custodian and users. Develop organization and structure. Compile and QC data.	Medium	Corps/ EPA	Working database to support other RSET objectives	Medium - High	High

Data/Jobs/Portland District Corps/RSET J-15325/Report/Matrix (Chemical Table 3)

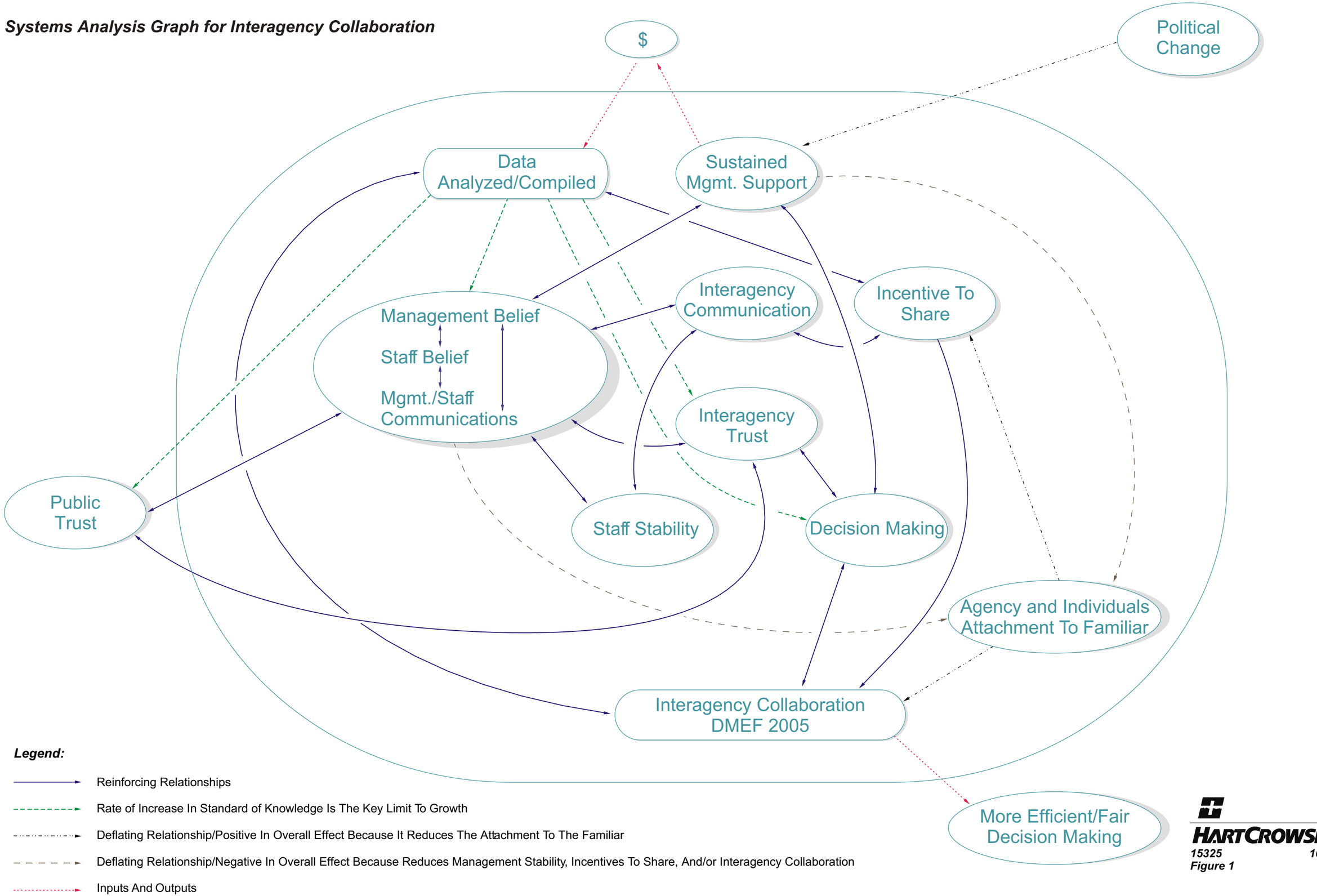
Schedule Note:

Short = < 1 year
Medium = 1-3 years
Long - 3-5 years

Cost Note:

Low = < $50,000
Medium = $50,000 - $100,000
High = > $100,000

Systems Analysis Graph for Interagency Collaboration



Legend:

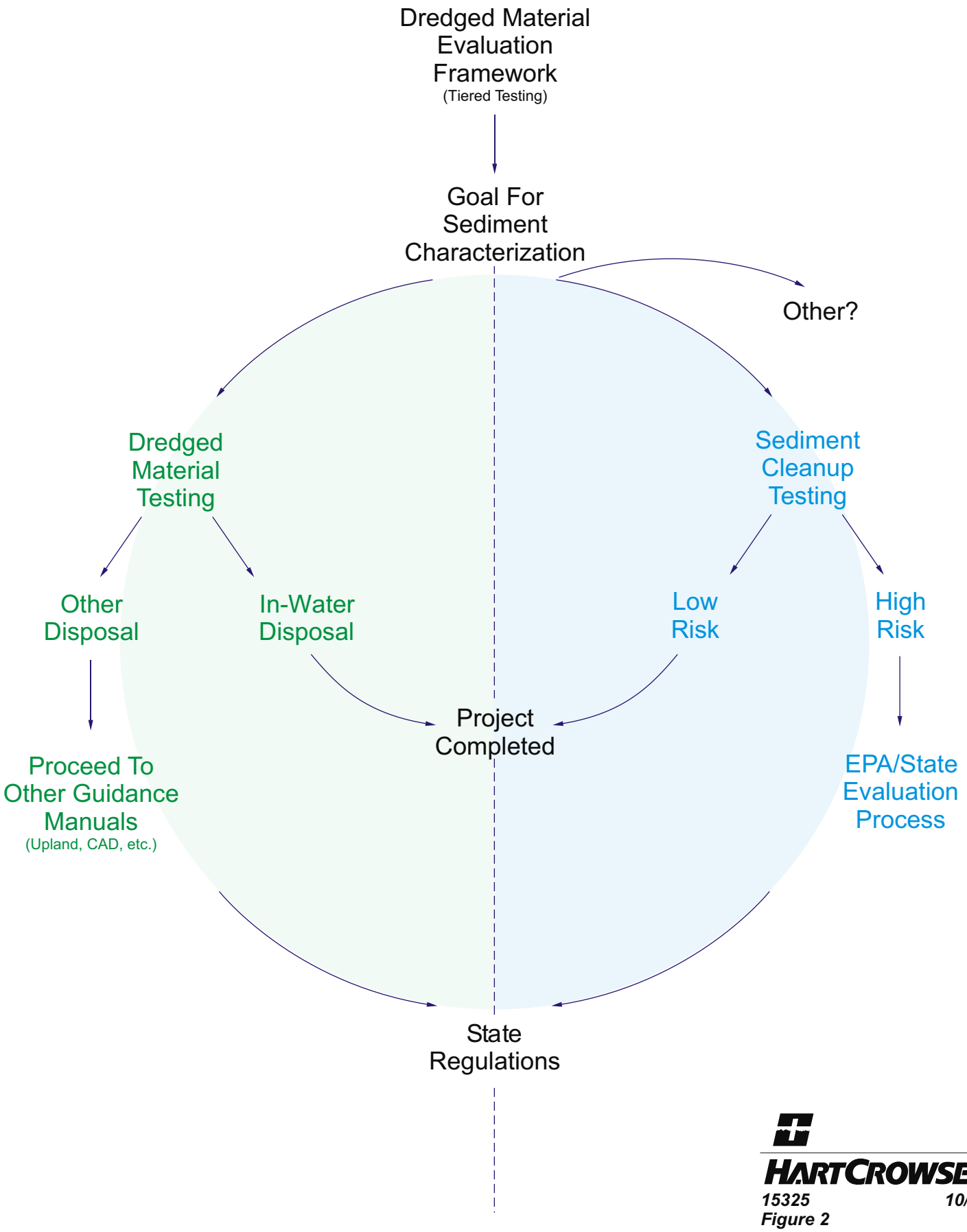
- Reinforcing Relationships
- Rate of Increase In Standard of Knowledge Is The Key Limit To Growth
- Deflating Relationship/Positive In Overall Effect Because It Reduces The Attachment To The Familiar
- Deflating Relationship/Negative In Overall Effect Because Reduces Management Stability, Incentives To Share, And/or Interagency Collaboration
- Inputs And Outputs

HARTCROWSER

15325 *10/02*

Figure 1

Proposed Goal For Updated DMEF



HARTCROWSER

15325 *10/02*

Figure 2

APPENDIX A
RSET WORKSHOP MEETING AGENDA

RSET Workshop Agenda

Hood River Inn
11, 12, and 13 September 2002

Wednesday – 11 September 2002

0730 – 0830 Registration and Breakfast

0830 – 0930 Introduction

Welcome – Peter Gibson, Chief, Operations Division, NWD, USACE
Howard Cumberland, Hart Crowser, John Malek, EPA, and
Jim Reese, NWD, USACE
Objectives and Goals of Workshop, Ground Rules, Introductions
Carie Fox – Mediator

0930 – 1030 First Breakout Session

Methodology/Ideal Situations Achieving Goals (3 Random Breakout Groups)
How far can we take the manual?
Geographic Range
Technical Breadth
Jurisdictional

1030 – 1045 Break

1045 – 1145 Second Breakout Session

Methodology/Realistic Issues for Situations for Achieving Goals
What are the barriers of taking the manual as far as the ideal?
Geographic Range
Technical Breadth
Jurisdictional

1145 – 1300 Buffet Lunch

(Bruce Hope to give summary on Oregon Guidance for Evaluation of Sediment at State Cleanup Sites)

1300 – 1500 Technical Breakout Sessions – 1

Policy
Biological Assessment
Chemical Assessment

1500 – 1515 Break

1515 – 1645 Technical Breakout Sessions – 2

1645 – 1700 Wrap up

1800 Dinner Reception

RSET Workshop Agenda

Hood River Inn
11, 12, and 13 September 2002

Thursday, 12 September 2002

0730 – 0830 Breakfast

0830 – 1030 Introduction - Brigadier General David A. Fastabend, Commander, NWD, USACE
Carie Fox – Issues/Accomplishments
Debrief on Breakout Session Results
Framing Presentation for Day 2

1030 – 1045 Break

1045 – 1145 Facilitated Breakout Sessions – 1
Scope of Work Matrix Development

1145 – 1300 Lunch – Tribal Presentation

1300 – 1430 Facilitated Breakout Sessions – 2
Sampling Frequency and Recency, Grain Size Exclusion, Disposal Site Assessment Issues

1430 – 1445 Break

1445 – 1515 Facilitator Debrief of Sessions 1 and 2

1515 – 1630 Focused Mini-Sessions – Public Involvement Process

1630 – 1700 Wrap-Up

1800 Dinner

RSET Workshop Agenda

Hood River Inn
11, 12, and 13 September 2002

Friday, 13 September 2002

0730 – 0830 Breakfast

0830 – 1200 Workshop Wrap-up/Paths Forward (Break from 1030 – 1045)

- Summary Report
- Data Gap Analysis
- Summary of Issues
- Financial Responsibilities
- Schedule
- Comments/New Issues
- Resource Allocation Based on Issues
- Interim Process

1200 Lunch – Adjourn

APPENDIX B
RSET MEMBERS INTERVIEW

APPENDIX C
WORKSHOP ATTENDEE LIST

USACE Regional Sediment Evaluation Team (RSET) Workshop

September 11, 12, 13, 2002
15325

Last Name	First	Days Attending	Email Address	Phone No. Fax No.	Organization	Title	Address
McFarland	Brenden	W, Th, F	bmcf461@ecy.wa.gov	360-407-6976 360-407-6904	Department of Ecology	Environmental Coordination Section Manager	PO Box 47600 Olympia, WA 98504-7600
Hope	Bruce	W	Hope.Bruce@deq.state.or.us	503-229-6251 503-229-6977	DEQ	Senior Environmental Toxicologist, Land Quality Division	811 SW 6th Avenue Portland, OR 97204-1390
Sutter	Jennifer	W, Th	Sutter.Jennifer@deq.state.or.us	503-229-6148 503-229-6899	DEQ	Project Manager	Northwest Region, 2020 SW Fourth Avenue, Suite 400, Portland, OR 97201-4987
Malek	John	W*, Th, F	Malek.John@epamail.epa.gov	206-553-1286 206-553-1775	EPA, Region 10	Sediment Quality Team Leader	1200 Sixth Avenue, WD128 Seattle, WA 98101
Fox	Carie	W, Th, F	carie@foxmediation.com	503-231-6557 413-254-8760	Carie Fox Mediation		3414 NE Clackamas Portland, OR 97232
Cumberland	Howard	W, Th, F	Howard.Cumberland@hartcrowser.com	503-620-7284 503-620-6918	Hart Crowser, Inc.	Senior Associate Marine Scientist	Five Centerpointe Drive, Suite 240 Lake Oswego, OR 97035
Fuji	Taku	W, Th, F	Taku.Fuji@hartcrowser.com	503-620-7284 503-620-6918	Hart Crowser, Inc.	Associate Toxicologist, Ph.D.	Five Centerpointe Drive, Suite 240 Lake Oswego, OR 97035
Thornburg	Todd	W, Th, F	Todd.Thornburg@hartcrowser.com	503-620-7284 503-620-6918	Hart Crowser, Inc.	Senior Associate Oceanographer, Ph.D.	Five Centerpointe Drive, Suite 240 Lake Oswego, OR 97035
Travis	Lou	W, Th, F	lou.travis@hartcrowser.com	503-6207284 503-620-6918	Hart Crowser, Inc.	Project Assistant	Five Centerpointe Drive, Suite 240 Lake Oswego, OR 97035
Collier	Tracy	W, Th, F	tracy.k.collier@noaa.gov	206-860-3312 206-860-3335	NMFS - Northwest Fisheries Science Center	Program Manager, Exotoxicology & Environmental Fish Health Program	Environmental Conservation Div., 2725 Montlake Blvd. East, Seattle, WA 98112
Johnson	Lyndal	W, Th, F	Lyndal.L.Johnson@noaa.gov	206-860-3345 206-860-3335	NMFS - Northwest Fisheries Science Center	Zoologist	Environmental Conservation Div., 2725 Montlake Blvd. East, Seattle, WA 98112
Meador	Jim	W, Th, F	jim.meador@noaa.gov	206-860-3321 206-860-3335	NMFS - Northwest Fisheries Science Center	Aquatic Toxicologist Ecotoxicology Program	2725 Montlake Blvd. East Seattle, WA 98112
Munn	Nancy		nancy.munn@noaa.gov	503-231-6269 503-231-6893	NMFS - Northwest Fisheries Science Center	Water Resources Policy Analyst	Oregon Habitat Branch, 525 NE Oregon St., Suite 500, Portland, OR 97232-2778
Murrell	Ed	W, Th, F		208-378-5707	National Marine Fisheries	Team Leader	10215 West Emerald, Suite 108 Boise, ID 83704
Tortorici	Cathy	Th, F	cathy.tortorici@noaa.gov	503-231-6268	NOAA Fisheries	Columbia River Estuary Coordinator	525 NE Oregon Street Portland, OR 97212
Gaul	Mike	W (no dinner)	mgaul@portofcoosbay.com	541-267-7678 541-269-1475	Port of Coos Bay	Director of Operations, Port of Coos Bay Harbormaster	125 Central Avenue, Suite 300, PO Box 1215, Coos Bay, OR 97420-0311
Degens	Sebastian	W, Th	degens@portptld.com	503-944-7214 503-944-7250	Port of Portland	Marine Planning & Development Manager	PO Box 3529 Portland, OR 97208
Harbert	Trey	W	harbet@portptld.com	503-944-7325 503-944-7353	Port of Portland	Environmental Program Manager, Portland Harbor Superfund Site	PO Box 3529 Portland, OR 97208
Willis	Alan	W, Th, F	willia@portptld.com	503-944-7050 503-944-7250	Port of Portland	Project Mananger, Marine Division	PO Box 3529 Portland, OR 97208
Boyden	Patty	W, Th, F	pboyden@portvanusa.com	360-992-1103	Port of Vancouver	Environmental Manager	3103 Lower River Road Vancouver, WA 98660
Foland	Denise	W, Th, F	dfoland@stl-inc.com	503-885-7888 503-885-9565	STL Seattle	Account Executive	PO Box 2864 Tualatin, OR 97062
Watson	Tom	W, Th, F	twatson@stl-inc.com	253-922-2310 253-922-5047	STL Seattle	Project Manager	5755 8th Street East Tacoma, WA 98424

Last Name	First	Days Attending	Email Address	Phone No. Fax No.	Organization	Title	Address
Buck	Jeremy	W, Th, F	Jeremy_Buck@r1.fws.gov	503-231-6179 503-231-6195	US Fish and Wildlife Service	Fish and Wildlife Biologist, Contaminant Specialist	2600 SE 98th Avenue, Suite 100 Portland, OR 97266
Anderson	Jim	W, Th, F	Jim.L.Anderson@nwp01.usace.army.mil	503-808-4351 503-808-4875	USACE	Project Manager	333 SW First Ave. (97204-3495), CENWP-OP-NW, PO Box 2946, Portland, OR 97208-2946
Ebner	Donna	W, Th, F	Donna.B.Ebner@nwp01.usace.army.mil	503-808-4898 503-808-4875	USACE	Hydrologist	333 SW First Ave. (97204-3495), PO Box 2946, Portland, OR 97208-2946
Gibson	Peter	W Intro	peter.c.gibson@usace.army.mil	503-808-3880 503-808-3890	USACE	Chief, Operations Division Northwestern Division	220 NW 8th, PO Box 2870, Portland, OR 97208-2870
Heaton	Russ	W, Th, F	russ.d.heaton@nww01.usace.army.mil	509-527-7282 509-527-7808	USACE	District Limnologist	201 N. 3rd Avenue Walla Walla, WA 99362
Inouye	Laura	W, Th, F	laura.s.inouye@erdc.usace.army.mil	601-634-2910 601-634-3120	USACE, Waterways Experiment Station	Research Biologist Environmental Laboratory	CEERD-EP-R 3909 Halls Ferry road Vicksburg, MS 39180-6199
Reese	Jim	W, Th, F	Jim.R.Reese@nwd01.usace.army.mil	503-808-3862 503-808-3900	USACE	Navigation Coordinator	Northwestrn Division, North Pacific Region, 220 NW 8th, PO Box 2870, Portland, OR 97208-2870
Sherman	Timothy	W, Th, F	timothy.j.sherman@usace.army.mil	503-808-4884 503-808-4875	USACE	Biologist, Reservoir Regulation and Water Quality	333 SW First Ave. (97204-3495), CENWP-PE-HR, PO Box 2946, Portland, OR 97208-2946
Siipola	Mark	W, Th, F	mark.d.siipola@usace.army.mil	503-808-4885 503-808-4875	USACE	Sediment Quality Specialist Ocean Dumping Coordinator	333 SW First Avenue, PO Box 2946, Portland, OR 97208-2946
Stirling	Stephanie	W, Th, F	Stephanie.K.Stirling@NWS02.usace.army.mil	206-764-6945 206-764-6602	USACE	Biologist	4735 E. Marginal Way S. PO Box 3755 Seattle, WA 98124-2255
Brenner	Robert	W, Th, F	Robert.Brenner@wadnr.gov	360-902-1083	WA Dept. of Natural Resources	DMMP Coordinator, Aquatic Resources	PO Box 47027 Olympia, WA 98504

Notes: Shaded area indicates non-agency attendee.

APPENDIX D
BREAKOUT SESSION ATTENDEES

APPENDIX D - BREAKOUT SESSION ATTENDEES

Policy Session 1 - Jim Anderson, Corps Portland District; Robert Brenner, WA DNR; Sebastian Degens, Port of Portland; Mike Gaul, Port of Coos Bay; Bruce Hope, DEQ; Brenden McFarland, WA Ecology; Nancy Munn, NMFS; Jim Reese, Corps NW Division; Mark Siipola, Corps Portland District; and Stephanie Stirling, USACE.

Policy Session 2 – Jennifer Sutter, DEQ; Mike Gaul, Port of Coos Bay; John Malek, EPA.

Biology Session 1 - Laura Inouye, Corps WES; Jim Meador, NMFS Science Center; Russ Heaton, Corps Walla Walla District; Lyndal Johnson, NMFS Science Center; Donna Ebner, Corps Portland District; and Jeremy Buck, USFWS Portland.

Biology Session 2 - Jim Anderson, Corps Portland District; Jim Reese, Corps NW Division; Tim Sherman, Corps Portland District; Bruce Hope, DEQ; Robert Brenner, WA DNR; Trey Harbert, Port of Portland; and Tom Watson, Severn-Trent Laboratories.

Chemistry Session 1 – Patty Boyden, Port of Vancouver; Trey Harbert, Port of Portland; Denise Foland, Severn-Trent Laboratories; Tom Watson, Severn-Trent Laboratories; Tim Sherman, Corps Portland District; and Jennifer Sutter, DEQ.

Chemistry Session 2 – Brenden McFarland, WA Ecology; Sebastian Degens, Port of Portland; Donna Ebner, Corps Portland District; Lyndal Johnson, NMFS Science Center; Mark Siipola, Corps Portland District; Russ Heaton, Corps Walla Walla District; Jim Meador, NMFS Science Center; Laura Inouye, WES; and Jeremy Buck, USFWS.

APPENDIX E
RSET ISSUE PAPERS

APPENDIX F
PROPOSED DECEMBER RSET MEETING AGENDA

APPENDIX F - PROPOSED DECEMBER RSET MEETING AGENDA

December 10th and 11th RSET Meeting
Note that this agenda will likely change five times before the actual meeting to incorporate RSET needs.

Day 1

8:30	Registration
9:00	Discussion of the Report, Part I: outlining major issues (fairly wide-ranging discussion: in essence scoping the discussion for the 2nd Day and getting some confusion and inevitable misperceptions cleared up).
10:00	White paper on what a "programmatic" would look like in this context
10:30	Break
10:45	Panel: Public Process POA's drawn from: Corps, DEQ, DOE or DNR, NFMS, EPA* This takes off from Jennifer's work rather than reinventing it
11:15	General Discussion, Public Process
11:45	Lunch
12:45	Presentation: Tribal Involvement - Corps Tribal Expert
1:00	General Discussion: Tribal Involvement
1:15	Discussing of short-term Issue Papers
2:15	Costing and Strategizing for long-term scope of work items
3:00	Subcommittee Definition
4:00	Adjourn

*Could maybe have someone from the Estuary Program or Power Planning Council; bring in ideas of what has worked. It can be a good idea to use the panels as a way of bringing in fresh faces without having to make them part of the group

Day 2

8:30	Report, Part II: now very guided discussion Interim Measures, Formation of subcommittees
10:30	Break
10:45	RDT interaction (Reese, what do you envision here?)
11:45	What's Next? March Meeting Agenda
12:00	Adjourn